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Active delivery: is it advantageous?

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SUMMARY: **Active delivery: is it advantageous?**

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Objective: *to assess the risks and benefits of two methods of delivering: active birth (upright and squatting) position versus traditional lithotomic position.*

Methods: *the study was conducted at the Maternal-Infant Department, Azienda Ospedaliero-Universitaria "Vittorio Emanuele, Ferrarotto, S.Bambino"- Catania (Italy), from 2000 to 2007. A total of 500 patients of similar ante-partum, intrapartum and socio-economic conditions were selected for the study. Only patients of gestation of more than 38 weeks, presenting in active labour with cephalic presentation were included. Exclusion criteria: multiple gestation, malpresentation, either previous caesarean section or myomectomy, foetal malformations or rupture of the membranes. Random selection was done after informing the patients about the modality of the position. The sample was divided into two groups: A-group (250 patients) adopted dynamic squatting position (active birth); B-group (250 patients): supine lithotomic position. Questionnaire was used to evaluate satisfaction criteria. Chi-square and t student tests were used for statistic evaluations. P value > 0.05 was considered not statistically significant.*

Results: *there was a not significant decrease of medical treatment (p=0.328), the length of second stage of the labour was less in A-group and it was statistically significant (p=0.0001), significant low rate of episiotomy (p=0.0204), para-urethral tears and vaginal trauma were similar (p=0.669), vacuum application was not significant (p=0.917) and no significant difference in Apgar score. Satisfaction score was significantly higher in A-group (χ^2=30.01; p=0.001).*

Conclusion: *active birth is associated with both clinical and psychological benefits, and active birth is also considered more accepted by the woman in labour.*

RIASSUNTO: **Il parto attivo: quali vantaggi comporta?**

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Obiettivo: *nel nostro studio, l'attenzione è stata rivolta alla stima dei rischi e dei benefici correlati a due modalità di parto spontaneo per via vaginale: il parto attivo (con partoriente in piedi o in posizione accovacciata di "squatting") e il parto in posizione supina tradizionale.*

Materiale e metodo: *lo studio è stato condotto presso l'Unità Operativa di Ginecologia e ostetricia dell'Azienda Ospedaliero-Universitaria "Vittorio Emanuele, Ferrarotto, S.Bambino"- Catania (Italy). Abbiamo esaminato un campione di 500 donne, afferite alla nostra attenzione dal 2000 al 2007, con sovrapponibili caratteristiche antepartum, intrapartum e simili condizioni socio-economiche. Venivano incluse solo donne gravide con età gestazionale superiore alle 38 settimane, in travaglio di parto attivo e con feto singolo in presentazione cefalica. I criteri di esclusione erano: gravidanza multipla, presentazioni fetali anomale, pregresso TC o miomectomia, malformazioni fetali, rottura prematura delle membrane. Dopo puntuale "counselling" delle pazienti, fu eseguita una selezione casuale per cui il campione venne suddiviso in due gruppi: gruppo A (250 pazienti trattate con parto attivo); gruppo B (250 pazienti di controllo).*

Risultati: *nel gruppo trattato rispetto al gruppo di controllo si riscontrò una riduzione statisticamente significativa della durata del II stadio del travaglio attivo e della necessità di eseguire episiotomie. Il "Satisfaction score", ottenuto tramite apposito questionario, rivelò un più alto indice di soddisfazione riguardo all'esperienza vissuta tra le donne appartenenti al gruppo trattato rispetto ai controlli.*

Conclusioni: *dai risultati del nostro studio si evince che il parto attivo apporta alle donne notevoli benefici sia sul piano clinico che psicologico e risulta essere la modalità di parto spontaneo per via vaginale maggiormente apprezzata dalle donne in travaglio.*

KEY WORDS: Active birth - Squatting position - Perineal trauma - Delivery.
Parto attivo - Posizione di "squatting" - Trauma perianale - Parto.

Introduction

Many positions are used to help the mother for delivering. Nasir et al. (2007) suggested that a squatting position during the second stage of labour shows more advantages than a supine one. The squatting position (Fig. 1) is more comfortable and gives less diffi-

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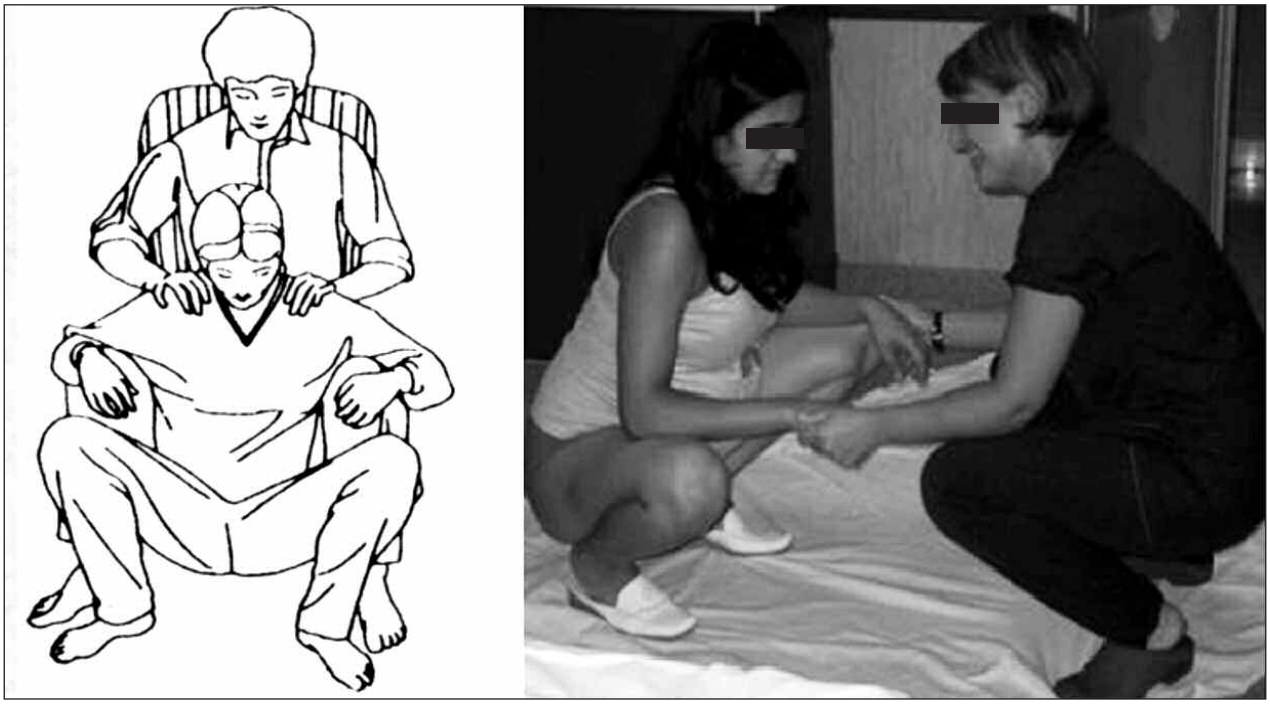

Fig. 1 - Active birth (squatting position).

culty in bearing down, less labour pain, less perineal or vaginal trauma and wound infection (1). During the labour the position of the mother influences many factors. The supine pose effects the uterine blood flow. The compression of uterus may compromise the irroration of the foetus. Another position is the lateral. Standing on the side is associated with an increase of dynamic activity of myometrium.

All over the world the classical supine position, with the legs in stirrups, until today, has been the prevalence even if it is more painful; nevertheless the advantage of this position comparing to the others has still not been demonstrated. The utility of the classic one consists on maintaining the traditional protocol which allons keeping intravenous access and monitoring better the women giving birth. However, this position limits the liberty of the movements and sometimes contrasts with the choice of the patient. Upright position is proposed to make the second stage of labour more acceptable. The data indicates that labouring and delivering in an upright position is associated with beneficial effects such as a lower rate of episiotomy, and a reduced use of medical analgesia and oxytocin (2-4). Moreover, upright pose shows less frequent abnormal heart rate patterns and maintains a higher umbilical arterial pH, comparing to lying position. However it is also limited when the membranes are ruptured in the presence of non-engaged foetal head, owing to the increased risk of either cord prolapse or maternal and foetal infections.

The aim of our study is to assess the risks and benefits of two methods of delivering: active birth (upright and squatting) versus traditional lithotomic position.

Material and methods

The case control study was carried out at the Maternal-Infant Department, Azienda Ospedaliero-Universitaria "Vittorio Emanuele, Ferrarotto, S. Bambino"- Catania, from 2000 to 2007. The sample consisted a total of 500 patients divided into two groups: A-group (250 patients) adopted dynamic upright-squatting position (active birth); B-group (250 patients): supine lithotomic position. The patients had similar ante-partum, intra-partum and socio-economic conditions. Only patients of gestation of more than 39 weeks, presenting active labour with cephalic presentation were included. Exclusion criteria: multiple gestation, malpresentation, either previous caesarean section or myomectomy, foetal malformations or rupture of the membranes. Random selection was done after informing the patients about the modality of the position. Active position consisted of a mixed pose where the pregnant woman helped by the mid-wife, changed during the second stage of labour, the situation from upright to squatting and viceversa in accordance with her desire (Fig. 1). The supine lithotomic position was

TABLE 1 - STATISTICAL EVALUATION.

	A-GROUP	B-GROUP	χ^2 e t-student
Episiotomy	30(12%)	50(20%)	χ^2=5.37 p=0.0204
para-urethral tears	10(4%)	13(5.2%)	χ^2=0.18 p=0.6694 NS
vacuum application	3(1.2%)	10(4%)	χ^2=2.83 p=0.0917
shoulder dystocia	0	1	χ^2=0 p=1 NS
Placenta retained	3(1.2%)	2(0.8%)	χ^2=0 p=1 NS
Uterine hypotony	4(1.6%)	3(1.2%)	χ^2=0 p=1 NS
mid of Apgar's score	9	8	t-student=7.07
pathologic foetal heart rate patterns	6(2.4%)	8(3.2%)	χ^2=0.07 p=0.786
Urgent caesarean section	5(2%)	9(6%)	χ^2=0.18 p=0.669
neonatal resuscitation	3(1.2%)	5(2%)	χ^2=0.13 p=0.721
Medical treatment	25(10%)	33(13.2%)	χ^2=0.96 p=0.328
Average Maternal blood loss	250±42	260±35	t-student=2.89 p=0.004
Length of second stage of labour (min)	20±12	32±17	t-student=9.12 p=0.001
Agree with procedures used	225(90%)	175(70%%)	χ^2=30.01

classical pose, with legs in stirrups. The third stage of labour in both group was managed in the supine position.

Questionnaire was used to evaluate satisfaction criteria. Chi-square and t student tests were used for statistic evaluations (5).

Results

Episiotomy occurred in 15(6%) in A-group and 20(8%) in B-group; para-urethral tears occurred in 10(4%) in A-group and 13 (5.2%) in B-group; vacuum application happened in 3 (1.2%) in A-group and 10 (4%) in B-group; shoulder dystocia did not happen in any case in A-group and in 1 case in B-group. Placenta was retained in 3 (1.2%) cases of A-group and 2 cases (0,8%) of B-group. Uterine hypotony, solved with drugs, was present in 4 (1.6%) of the first group and in 3 (1.2%) of the second one. The mean of Apgar's score was 9 in A-group and 8 on the B-group. Foetal heart rate patterns were pathologic in 6 (2,4%) cases of the first group and in 8 (3,2%) cases of the second one. Urgent caesarean section was done in 5 (2%) cases in A-group and 9 (3.6%) cases in B-group. Requirement of neonatal resuscitation was done in 3 (1.2%) cases of A-group and 5(2%) cases in B-group.

Medical treatment was in 25 (10%) versus 33 (13,2%), the length of the second stage of labour was 20 minutes in A-group and 32 in B-group. Average Maternal blood loss was 250 cc in A-group and 260 cc in B-group.

Emotional responses indicated that 225 (90%) patients agreed with the former procedure and 175 (70%) with the latter one. Anxiety was in 174 (69,6%) in the first group and in 199 (79.6%) in the second group (Tab. 1).

Conclusion

Active birth is associated with both clinical and psychological benefits, and it is also considered more accepted by the woman in labour. The choice of the patients to have an active birth is due to the fact that

the pregnant feels less conditioned and participates actively in the birth. It is consolidated that movements of the patient when they are coordinated are very useful in reducing the second stage of labour and making this very important moment more comfortable for the woman (6).

We believe that giving the best chance to the woman in labour is very important, but every position must be chosen by the patient after the proposal of either the mid-wife or the physician.

Even if the sentence in the Bible reaffirms that female pain is inside the birth: *"To the woman God said, I will greatly multiply your pangs in childbearing; in pain you shall bring forth children"* (7), the duty of the people who assists the pregnant woman in labour (midwifes, physician or relatives) consists of making the crucial moment of the human being when life sprouts from the maternal womb, easer.

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